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REMARKS

Claims 1-19 are currently pending in the subject application and are presently under consideration. Claims 9-13 have been amended herein. A listing of all claims is at pages 2-5. Favorable consideration of the subject patent application is respectfully requested in view of the comments and amendments herein.

**I. Objection to the Specification**

The proposed amendments to the specification have been objected to under 35 U.S.C. §132 for introducing new matter into the disclosure. Applicants' representative respectfully submits that this objection is moot in light of the concurrently filed affidavit (pursuant 37 CFR 1.132) that provides factual evidence that one skilled in the relevant art at the time of the invention would recognize the printed symbol errors and that it would be obvious to one skilled in the relevant art at the time of the invention, in view of the specification as filed and what was known in the relevant art at the time of the invention, to remedy such errors.

Furthermore, and as stated in the previous Reply, the proposed amendments to the specification clarify and complete the disclosure without departing from or adding to the original disclosure.

*New matter* is matter involving a *departure* from or an *addition* to the *original disclosure* (specification, drawings or claims). See *Twin Disc, Inc. v. The United States*, 10 Cl.Ct. 713, 745 (Cl.Ct. 1986), 231 U.S.P.Q. 417. See also *Triax Co. v. Hartman Metal Fabricators, Inc.*, 479 F.2d 951, 956-57 (2d Cir. 1973), 178 U.S.P.Q. 142. An amendment to an application is *not* "new matter" within the Patent Act or Rules of the Patent Office ... [i]f the latter-submitted material accused of being "new matter" simply *clarifies* or *completes* the prior disclosure .... *Eli Lilly and Co., v. Premo Pharmaceutical Laboratories*, 630 F.2d 120 (1980), 207 U.S.P.Q. 719 citing *Triax*, 479 F.2d 951, 956-57, 178 U.S.P.Q. 142.

Since the proposed amendments *clarify* and *complete* the specification by *curing* minor printer *errors* and such errors would be obvious to one of ordinary skill in the art at the time of the invention, the amendments are not new matter. See MPEP §2163.07 ("[A]n amendment to correct an *obvious error* does *not* constitute new matter where one skilled in the art would not

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only recognize the existence of error in the specification, but also the appropriate correction. *In re Oda*, 443 F.2d 1200, 170 USPQ 268 (CCPA 1971)") (Emphasis added); See *In re Oda* at 1204 ("[T]hat *amendments* may be made to patent applications for the purpose of *curing defects*, obvious to one skilled in the art, in the drawings or *written descriptions* of inventions, is so well settled that we deem it unnecessary to cite authorities in support thereof.") (Emphasis added).

For example, applicants' representative noted that symbol " $\triangleq$ ," as known by the ordinary practitioner at the time of the invention, defines a "free name." In the previous Reply, applicants' representative provided a non-prior art publication titled "*Mobile Ambients*" (dated February 11, 1999) as evidence to illustrate that the symbol " $\triangleq$ " is utilized to define "free names" with respect to the relevant art at the time of the invention. Specifically, on page 6 of the non-prior art publication, the following list of "free names" is provided.

#### Free names

$fn((vn)P)$	$\triangleq$	$fn(P) - \{n\}$	$fn(m\ n)$	$\triangleq$	$\{n\}$
$fn(0)$	$\triangleq$	$\emptyset$	$fn(out\ n)$	$\triangleq$	$\{n\}$
$fn(P \mid Q)$	$\triangleq$	$fn(P) \cup fn(Q)$	$fn(open\ n)$	$\triangleq$	$\{n\}$
$fn(!P)$	$\triangleq$	$fn(P)$			
$fn(n[P])$	$\triangleq$	$\{n\} \cup fn(P)$			
$fn(MP)$	$\triangleq$	$fn(M) \cup fn(P)$			

Thus, in light of "*Mobile Ambients*," it would be obvious to one of ordinary skill in the relevant art at the time of the invention that the "free names" in the table at page 15 and the corresponding description at pages 15-16 of the subject application included typographical errors; namely, it would be obvious that the symbol "@" should have been " $\triangleq$ " in the "free names" table. Similarly, the other proposed amendments to the specification, as provided in the previous Replies, relate to printed symbol errors that would be obvious to one skilled in the relevant art at the time of the invention.

Moreover, it was asserted in the Office Action (dated May 5, 2004) that "applicants are required to cancel the new matter in the reply to this Office Action or to show the support in the original specification to possibly overcome this objection." (Office Action, p.3, ¶3). In the Reply to this Office Action, applicants' representative reminded the Examiner that he did not

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meet his burden since he stated that added material "has been sampled," rather than clearly indicating what he considered to be new matter. (*See MPEP §608.04 ("the subject matter which is considered to be new matter *must* be *clearly* identified by the examiner.")* (Emphasis added)). Thus, applicants' representative does not know what amendments the Examiner considers to be new matter. In the subject Final Office Action, the Examiner still does not distinguish between amendments that he considers to be new matter and matter consistent with the application as filed. Instead, the Examiner briefly passes over two examples provided by applicants' representative. Thus, the Examiner still has not met his burden pursuant MPEP §608.04 to clearly identify what he considers to be new matter.

In view of the above, it is respectfully requested that this objection be withdrawn.

## II. Rejection of Claims 1-19 Under 35 U.S.C. §112

Claims 1-19 stand rejected under 35 U.S.C. §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Withdrawal of this rejection is requested for at least the following reason. The proposed amendments to the specification, as submitted in previous Replies, cure typographical errors that would be obvious to one skilled in the relevant art at the time of the invention in light of the concurrently filed affidavit, which provides factual evidence that one skilled in the relevant art at the time of the invention would be able to make and/or use the invention without undue experimentation. Accordingly, this rejection to the claims should be withdrawn.

## III. Rejection of Claims 1-19 Under 35 U.S.C. §112

Claims 1-19 stand rejected under 35 U.S.C. §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time of the application was filed, had possession of the claimed invention. Withdrawal of this rejection is respectfully requested for at least the following reason. The proposed amendments to the specification submitted in the previous Replies cure typographical errors that would be obvious to one skilled in the relevant art at the time of the invention in view of the comments herein and the concurrently filed

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affidavit. Accordingly, it is respectfully submitted that the amendments render this rejection moot.

**IV. Rejection of Claims 9-13 Under 35 U.S.C. §112**

Claims 9-13 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point and distinctly claim the subject matter which applicant regards as the invention. Withdrawal of this rejection is respectfully requested for at least the following reason. Claims 9-13 have been amended herein to clarify the fact that the process executing the instructions and the input process are different processes. The amendments do not raise issues that require further search since they merely facilitate distinguishing between the two processes recited in the claims as originally filed. Accordingly, this rejection should be withdrawn.

**V. Rejection of Claims 1-19 Under 35 U.S.C. §101**

Claims 1-19 stand rejected under 35 U.S.C. §101 because the claimed invention is directed to non-statutory subject matter. Withdrawal of this rejection is respectfully requested for at least the following reason. The subject claims recite statutory subject matter.

The inquiry into patentability pursuant §101 requires an examination of the contested claims to see if the claimed subject matter, as a whole ... has been *reduced to some practical application rendering it "useful."* AT&T at 1357 citing *In re Alappat*, 33 F.3d 1526, 31 1544, 31 U.S.P.Q.2D (BNA) 1545, 1557 (Fed. Cir. 1994) (Emphasis added) (holding that more than an abstract idea was claimed because the claimed invention as a whole was directed toward forming a specific machine that produced the useful, concrete, and tangible result of a smooth waveform display).

In the subject Final Office Action, it is contended that applicants' arguments are not supported by the claims. Applicants' representative respectfully disagrees. The arguments submitted in the previous Reply provide that the subject claims recite a practical application that outputs a *useful, concrete, and tangible result* and, thus, is statutory subject matter pursuant §101. In particular, the subject claims recite analyzing an input process/ambient against a formula using a predetermined modal logic based on ambient calculus to determine whether the

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process satisfies the formula and outputting whether the process satisfies the formula. Thus, it is submitted that nothing has to be read into the subject claims to satisfy §101 since the claims produce a *useful, concrete, and tangible result*.

In order to facilitate the Examiner's understanding, applicants' representative submitted several examples with the previous Reply. However, these examples do not have to be recited in the claims in order for the claimed invention to be directed towards statutory subject matter. The court in *AT&T* provided the following discussion of *Arrhythmia Research Tech. Inc. v. Corazonix Corp.*, 958 F.2d 1053 (Fed. Cir. 1992) that illustrates §101 requirements.

Arrhythmia's process claims included various mathematical formulae to analyze electrocardiograph signals to determine a specified heart activity. See *id.* [*Arrhythmia*] at 1059, 22 U.S.P.Q.2D (BNA) at 1037-38. The *Arrhythmia* court reasoned that the method claims qualified as statutory subject matter by noting that the steps transformed physical, electrical signals from one form into another form - a *number representing a signal related to the patient's heart activity*, a non-abstract output. See *id.* 22, U.S.P.Q.2D (BNA) at 1038. *The finding that the claimed process "transformed" data from one "form" to another simply confirmed that Arrhythmia's method claims satisfied §101 because the mathematical algorithm included within the process was applied to produce a number which had specific meaning - a useful, concrete, tangible result - not a mathematical abstraction.* See *id.* at 1060, 22 U.S.P.Q.2D (BNA) at 1039.

(*AT&T Corp. v. Excel Communications, Inc.*, 172 F.3d 1352, 1359 (Fed. Cir. 1999) (Emphasis added).

From the foregoing, it is readily apparent that all that is required to satisfy §101 is a transformation of data to produce a result with meaning. In the subject claims, the output is the result of applying the process/ambient against the formula via ambient calculus modal logic based representations, which has meaning - it can indicate whether the move is permissible and allow the move and thus, the claimed invention produces a useful, concrete and tangible result and is statutory subject matter.

In addition, the *AT&T* court stated, ““after Diehr and Alappat, the mere fact that a claimed invention involves inputting numbers, calculating numbers, outputting numbers, and storing numbers, in and of itself, would not render it non-statutory subject matter ....”” (*AT&T* at

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1359 quoting *In re Alappat*, 33 F.3d 1526, 1544 (Fed. Cir. 1994)). Moreover, the Supreme Court has construed §101 broadly, noting that Congress intended statutory subject matter to "include anything under the sun that is made by man." (See *Diamond v. Chakrabarty*, 447 U.S. 303, 309 (1980) quoting S. Rep. No. 82-1979, at 5 (1952); H.R. Rep. No. 82-1923, at 6 (1952))

In view of the above, it is respectfully submitted that the rejection of independent claims 1, 8, 9, 13 and 14 (and claims 2-7, 10-12 and 15-19, which depend therefrom) should be withdrawn.

**VI. Rejection of Claims 1-4, 6-7, 9-10, 12, 14-16 and 18-19 Under 35 U.S.C. §102(a)**

Claims 1-4, 6-7, 9-10, 12, 14-16 and 18-19 stand rejected under 35 U.S.C. §102(a) as being anticipated by Stanski, *et al.*, "Expressing Dynamics of Mobile Agent Systems Using Ambient Calculus", Proceedings of Ninth International Workshop on Database and Expert Systems Applications, August 1998, pages 434-439. It is respectfully submitted that this rejection should be withdrawn for at least the following reasons. Stanski, *et al.*, does not describe, teach or suggest each and every limitation of the subject claims.

A single prior art reference anticipates a patent claim only if it expressly or inherently *describes each and every limitation* set forth in the patent claim. *Trintec Industries, Inc. v. Top-U.S.A. Corp.*, 295 F.3d 1292, 63 U.S.P.Q.2D 1597 (Fed. Cir. 2002). "A claim is anticipated only if *each and every element* as set forth in the claim is found, either expressly or inherently *described* in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The *identical invention* must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

In the subject Final Office Action, it is contended that applicants argued features in the previous Reply that are not recited in the rejected claims. Specifically, the Examiner contends a "model checking technique/theorem" is not recited in the subject claims. Applicants' representative respectfully disagrees. In particular, it was submitted in the previous Reply that independent claims 1, 9 and 14 recite *analyzing* whether a process satisfies a formula utilizing a predetermined modal logic based on ambient calculus and that *analyzing*, as defined in the

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specification, can be summarized *via* an ambient calculus-based modal logic *model checking technique/theorem*. (MPEP §21111.01; *In re Hill*, 161 F.2d 367 (CCPA 1947) (“Applicant may be his or her own lexicographer as long as the meaning assigned to the term is not repugnant to the term’s well known usage.”). Since the applicant clearly defines the term “analysis” in the specification to include a “model checking technique/theorem,” the specification must be used in interpreting claim language. (MPEP §2106. *See Markman v. Westview Instruments*, 52 F.3d 967, 980, 34 USPQ2d 1321, 1330 (Fed. Cir.) (en banc), aff’d, U.S. , 116 S. Ct. 1384 (1996) (Office personnel must rely on the applicant’s disclosure to properly determine the meaning of terms used in the claims.)). Thus, applicants’ previous argument is consonant with the claimed invention and is re-iterated in the following paragraph.

As submitted in the previous Reply, Stanski, *et al.*, does not describe, teach or suggest employing an ambient calculus-based modal logic *model checking theorem analysis* to determine whether a process satisfies a formula. Rather, Stanski, *et al.* references non-prior art and alleges it “present[s] some early work in the area of formal agent notation as introduced by Cardelli and Gordon with their ambient calculus [2].” In addition, Stanski, *et al.* alleges this paper “discuss[es] this important work [of Cardelli and Gordon] and comment[s] on the limitations within their formal notation while proposing some extensions.” These extensions include “agent billing, migration rules and acceptance restrictions, security, descriptions of environment and agent capabilities.” However, this overview of Cardelli and Gordon’s early work provided Stanski, *et al.*, does not teach or suggest the invention as claimed.

In view of the foregoing, it is respectfully requested the rejection to independent claims 1, 9 and 14 and dependent claims 2-4, 6-7, 10, 16 and 18-19 be withdrawn.

#### VII. Rejection of Claims 5, 8, 11, 13, and 17 Under 35 U.S.C. § 103(a)

Claims 5, 8, 11, 13, and 17 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Stanski, *et al.*, “Expressing Dynamics of Mobile Agent Systems Using Ambient Calculus”, Proceedings of Ninth International Workshop on Database and Expert Systems Applications, August 1998, pages 434-439, in view of Applicants’ disclosure of “a unification algorithm” (Application, p.34). It is respectfully submitted that this rejection should be withdrawn for at least the following reasons. Independent claims 8 and 13 recite limitations similar to

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independent claims 1, 9 and 14 regarding *analyzing* whether a process satisfies a formula utilizing a predetermined *modal logic based on ambient calculus*. Therefore, for at least the reasons discussed *supra*, Stanski, *et al.* does not teach or suggest the subject claims. In addition, the known "unification algorithm" disclosed in the subject application does not make up for the aforementioned deficiencies of Stanski, *et al.* Accordingly, the rejection of claims 5, 8, 11, 13 and 17 should be withdrawn.

**Conclusion**

The present application is believed to be condition for allowance in view of the above amendments and comments. A prompt action to such end is earnestly solicited.

In the event any fees are due in connection with this document, the Commissioner is authorized to charge those fees to Deposit Account No. 50-1063.

Should the Examiner believe a telephone interview would be helpful to expedite favorable prosecution, the Examiner is invited to contact applicants' undersigned representative at the telephone number listed below.

Respectfully submitted,

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